**Openers #6 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

*Each day when you come into class, there will be a problem projected for you to complete. Find the appropriate box to complete the problem in and work on it when you arrive.*

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| **Date:** **\_\_\_\_ / \_\_\_\_/ \_\_\_\_** | 6-1Find a positive and negative angle coterminal to -150⁰.Find an angle complementary to 63⁰4’15”.Find the exact radian measure of 630⁰.Find the exact degree measure of $\frac{11π}{4}.$Express θ=4 in terms of degrees, minutes and seconds. |
| **Date:** **\_\_\_\_ / \_\_\_\_/ \_\_\_\_** | 6-2-113θ4x - 42x2 – 5x4x - 42x2 – 5xFind the values of the six trig functions for θ. yFind the exact values of x and y. x4θx10θyUse Pythagorean identities to write 5sin2θ­ + 5cos2θ as an integer.Simplify. $\frac{cot^{2}θ-4 }{cot^{2}θ-cotθ-6}$Verify the identity. cotθsecθ = cscθ |
| **Date:** **\_\_\_\_ / \_\_\_\_/ \_\_\_\_** | 6-2-2Find the exact values of the trig functions for cot θ = $\frac{7}{24}$.A forester, 300 feet from the base of a tree, observes the angle between the ground and top of the tree is 60⁰. Estimate the height of the tree.Verify the identity. (tanθ + cotθ)tanθ = sec2θFind the exact values of the six trig functions of each angle.1. 180⁰ b) $\frac{5π}{2}$

Find the quadrant containing θ if 1. tanθ <0 and cosθ>0 b) cscθ >0 and cotθ <0
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| **Date:** **\_\_\_\_ / \_\_\_\_/ \_\_\_\_****Date:** **\_\_\_\_ / \_\_\_\_/ \_\_\_\_****Date:** **\_\_\_\_ / \_\_\_\_/ \_\_\_\_****Date:** **\_\_\_\_ / \_\_\_\_/ \_\_\_\_** | 6-3Find the values of the six trig functions of P($\frac{-5}{13}, \frac{-12}{13}). $Find the coordinates of P on the unit circle and the exact values of the six trig functions of 6π.Find the exact value of1. sec ($\frac{-π}{4})$ b) csc (-45⁰)

Verify the identity. cot(-x)cos(-x) + sin(-x) = -cscx6-4Find the reference angle if θ has the given measure a) -110⁰ b) $\frac{7π}{4}$Find the exact value of1. cos ($\frac{5π}{4}) $ b) sec -210⁰

Approximate the acute angle θ to the nearest 1’. cosθ = .8Approximate to four decimal places. cot 1030.2⁰Approximate to the nearest .1⁰ all angles θ in the interval [0⁰,360⁰) that satisfies1. sinθ = .8825
2. secθ = 1.4291

6-5Find the amplitude and period and sketch the graphs.1. y = $\frac{1}{2}\sin(4x)$ b) y = 2 cos$\frac{1}{3}x$

6-5 continued…Find the amplitude, period and phase shift and sketch the graphs.1. y = cos (x - $\frac{π}{3})$ b) y = sin ($\frac{1}{2}x+ \frac{π}{4})$

6-6Find the period and sketch the qraphs. Show asymptotes.1. y = $\frac{1}{2}\csc(x)$
2. y = tan(x + $\frac{3π}{4})$
3. y = cot3x
4. y = sec (x - $\frac{3π}{4})$

6-7Given the indicated parts of the triangle ABC with γ = 90°, find the exact values of the remaining parts.1. α = 60°, c = 6
2. b = 7$\sqrt{2}$, c = 14
3. The length of a shadow of a tree is 125 feet when the angle of elevation of the sun is 33⁰. Approximate the height of the tree.
4. An amateur radio operator erects a 75-foot vertical tower for an antenna. Find the angle of elevation to the top of the tower at a point on level ground 50 feet from its base.
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